App. F. IX-4

Previous References. 1940-1 (War)

War File No. 232-40
Serial Nos. 1 to 3.

Later References.

GENERAL AND REVENUE SECRETARIAT.

Serial Nos. Three only.

Part B for August 1942.

SUBJECT.

A. R. P. in Indian States - Protection from air attack on important Electrical installations.

M. Krishnan
21.8.42

137A/W.

A.R.P in Indian States - Protection from air attack on important Electrical Installations.

General and Revenue Secretariat

W File No. 232 of 1940-1 [App. F. III-2

Serial No.	
1	From The Secy to the Hon'ble the Resident. F. 78(7)-H/W dt 21st March 42 re: protection from air attack on important Electrical installations. Subd for perusal with a draft reply to the Residency. on the lines of the Law Ministry's minute on the P.V.D. Draft submitted for approval. Chief Secy 23/3
2.	Issued Pol. 1794 dt 24th March 42 to the Resy Msm 2068 " to the G.S.C.P.S. 2069 to the I.P.

NOTE—Cont. Sheet.

W.D.C4155—G.P.B.—55,000—23-10-41

1918/W

General and Revenue Secretariat

Protection from air attack on important electrical installations

File No. of 194 . [App. F. III—2

Serial No. 3.

MAY 12 1942 No 4722

P L R.

From The G.S.C.P.S.

257278 7th ms. 42 forwarding copies of Correspondence with Mr. Mathews and replies received thereon.

The G.S.C.P.S was asked to get in touch with Mr. Mathews and he now sent copies of Correspondence for information of Govt. It is seen that the suggestions contained in the reply are being adopted. The file may be returned by the Secretary also.

RS 8/5 SC.

9/5/42

Law Minister (Kannada) Edn to see

12/5/42

12/5/42

12/5

2531. 12.5.42

666

D. 1433. 9/12.5.42.

12/5

GOVT. OF MYSORE 9 MAY 1942 CHIEF SECRETARY

NOTE—Contn. Sheet.

WD 04155—GPB—55,000—23-10-41

W 232-40-1

The reply to this communication should be addressed to the Secretary to the Resident in Mysore, Bangalore, by designation and not by name.

No. F.73(7)-40/W.

1374/W.

FROM

THE SECRETARY TO THE HON'BLE THE RESIDENT IN MYSORE.

To

The Chief Secretary to the Government of
His Highness the Maharaja of Mysore,
Bangalore.

Subd. for perusal in the first instance.

Law Minister) 22.3.42

Dated Bangalore, the 21st March *1942*.

A.R.P. in Indian States - Protection from air attack on important Electrical Installations.

SIR,

The Government of India state that cases have arisen in which classification for a town has been proposed on the ground that important Generating Stations or other Electrical Installations are situated in the vicinity. They consider it possible that in such instances structrual precautions to the installation itself would probably be sufficient and that there is no real necessity to classify or take full scale Air Raid Precautionary Measures in the township. They add that Mr.H.M. Mathews, their Electrical Commissioner, will be glad to render advice as to the precautionary measures which should be taken in Electrical Installations and should the States so desire, they may get into direct touch with Mr.Mathews whose address is Esplanade, East Calcutta.

I have instructed G.S., C.P.S. yesterday to do so 22-3-42

2. In this connection the Government of India observe that in the case of Sivasamudram, Shimshapur, Kankanhalli, Thippagondanahalli and Soldevanahalli for which the Government of Mysore have proposed classification, Structrual Precautions to the actual Plant may be sufficient and that it may not be necessary to classify the townships higher than Class IV. They

I have discussed this yesterday with D.G.P. & G.S. C.P.S. Reply sent was agreed 22-3-42

They will be glad to have the views of the Government of Mysore in this regard.

I have the honour to be,
Sir,
Your most obedient servant,

SECRETARY TO THE RESIDENT.

KK

Lr 1784. d 24-3-1942

To W 232-Ho-2.

The Secy. to the Resident.

A.R.P. in Indian States - Protection from air attack on important electrical installations.

- - -

Sir,

I am directed to acknowledge ~~with thanks~~ the receipt of your letter No.F.78(7)-40/W dated the 21st March 1942 on the above subject, and to state that the Genl. Supdt., C.P.S., has been instructed to ~~keep~~ for into touch with Mr. H.M. Mathews Electrical Commr., Esplanade East, Calcutta.

I am further to state that this Govt. are in agreement with the view of the Govt. of India that in the case of Sivasamudram, Shimshapur, Kankanhalli, Thippagondanahalli and Soldevanahalli, structural precautions to the actual plant is sufficient.

I have etc.,

Chief Secy. to Govt.

Copy to the Genl. Supdt., C.P.S. with a copy of Resy. letter for information/ ~~He is requested to get into touch with Mr. Mathews regarding the electrical installations in the State.~~ are necessary action

Memos. 2068/W/Ene, 2069/W/Ene, Chief Secy. to Govt.

Copy to I.G.P. with a copy of Resy. letter. for information.

W 232-40-2.

Rel 1794
dt 24.3.1942

A.R.P. in Indian States - Protection from air attack on important electrical installations.

- - - - - -

I am directed to acknowledge the receipt of your letter No.F.78(7)-40/W dated the 21st March 1942 on the above subject, and to state that the General Superintendent, Cauvery Power Scheme, has been instructed to get into touch with Mr. H.M. Mathews, Electrical Commissioner, Esplanade East, Calcutta.

I am further to state that this Government are in agreement with the view of the Government of India that in the case of Sivasamudram, Shimshapur, Kankanhalli, Thippagondanahalli and Soldevana halli, structural precautions to the actual plant ~~is~~ are sufficient.

I have the honour to be,
Sir,
Your most obedient servant,

(Sd.) M.G. Mehkri.
~~for~~ Chief Secretary to Government.

Memo No. 2068/W-Enc. Dated the 23rd March 1942.

Copy of the above is forwarded with compliments to the General Superintendent, Cauvery Power Scheme, for information and necessary action with a copy of Residency letter dated the 21st March 1942.

(Sd.) M.G. Mehkri.
For Chief Secretary to Government.

Memo No. 2069/W-Enc. Dated the 23rd March 1942.

Copies of the above are forwarded with compliments to the Inspector-General of Police in Mysore, for information, with a copy Residency letter dated the 21st March 1942.

For Chief Secy. to Govt.

W 232-40-3. 1918/W.

Telephone No. 2110

IN REPLY REFER TO No. 25727. ENCLO. 8 Four.

Telegraphic Address:
"GOMED"

CODES USED
BENTLEY'S LIEBER'S
A. B. C. 6TH EDITION
BUSINESS TELEGRAPH CODE.

GOVERNMENT OF MYSORE
ELECTRICAL DEPARTMENT.

OFFICE OF THE GENERAL SUPERINTENDENT.
CAUVERY POWER SCHEME,
Camp Mysore,
Bangalore, 6th May 1942.
(MYSORE, S. INDIA.)

From

M. HAYATH, ESQ., B.E., (MECH.), B.S.E.E.,
GENERAL SUPERINTENDENT,
CAUVERY POWER SCHEME,
BANGALORE.

War Tel
CHIEF SECRETARY, 8 MAY 1942 GOVT OF MYSORE

The Chief Secretary to the Govt. of Mysore,
BANGALORE.

Sir,

Subject:- Protection from air attack on important electrical installations.

I have the honour to invite your kind reference to your Memo No.2068/W dated the 23rd March 1942, forwarding a copy of your letter No.Pol.1794 dated the 23rd March 1942 addressed to the Secretary to the Hon'ble the Resident in Mysore, directing me to get into touch with Mr.H.M. Mathews, Electrical Commissioner, Calcutta, on the above subject, and to enclose herewith copies of correspondence with the above officer and replies received thereon for favour of information of Government.

The suggestions contained in in the D.O.letter dated 23rd April 1942 of Major Evans are being adopted. With regard to para 6 of this letter, necessary drawings are being prepared and a requisition is being sent to the Superintending Engineer for making necessary allottment for the supply of "weldmesh" required for providing protection to the essential equipment referred to in his

P.T.O.

letter.

I have the honour to be,
Sir,
Your most obedient servant,

M. Shaykevich
General Superintendent, CPS.

MH-CSC.

Copy of D.O.No.737 dated 1st April 1942, from the General Superintendent, C.P.S., Bangalore, to Mr.Mathews, Electrical Commissioner, Government of India, Esplanade East, Calcutta.

Protection from air attack on important electrical installations.

I am enclosing herewith copy of letter No.Pol.1794 dated the 23/24th March 1942 addressed to the Secretary to the Hon'ble the Resident in Mysore by the Chief Secretary to the Government of Mysore, and to state that several structural precautions have been taken in the case of the important Generating and Step-down Stations in the State.

The work that have been completed and are under execution at the various places may briefly be stated as follows:-

(1) In the case of Station buildings, all the unnecessary doors and windows have been bricked up with 1½' burnt brick walls.

(2) Wherever ventilation is considered absolutely necessary in order to keep down the temperatures of transformers and generators within the permissible limits, arrangements have been made to put baffle walls on the outside leaving a certain space between the station building and the baffle wall, but suitably supported by buttresses to given necessary strength.

(3) In the case of buildings where the personnel will be on duty and moving machinery is under operation, all glasses have been removed from all the windows and wood has been substituted.

(4) In the case of transformer compartments and floors in which switches have been housed, oil separating walls in some cases and cement asbestos sheets in other cases have been put in to localise the fire that may be caused due to damage to the equipment.

(5) In the case of exciters of the Station, a separate removable roof has been put on the top of the baffle walls constructed surrounding the machine virtually housing them in a separate roof inside the station.

(6) In the second and third floors of the transformer station at Sivasamudram and the Receving Stations at Bangalore and Mysore and Belagola, the windows have been bricked up to half the height and the remaining half has been blocked with thick wooden venetian shutters to provide necessary protection and as well as a minimum ventilation.

(7) At Sivasamudram the Forebay wall all round towards the precipice has been sufficiently reinforced to avoid danger of bursting and flooding the hill side of the Generating Station.

contd.....

(8) The tail races at Sivasamudram and Shimshapura have been covered with bamboo thatties and painted with camouflage paint to avoid the bubbling water from the submerging pit being visible from a reasonable height.

(9) All the syphons and low pressure pipes, including the Surge Tank at Shimshapura have been painted with camouflage paint.

(10) All the high pressure pipes at Sivasamudram and Shimshapura are being protected by brick walls on either side covered with rejected wooden sleepers and two layers of sand bags.

(11) All the key men at the various stations are being provided with a keymen's shelter of sufficient strength to protect them even against collapse of roof.

(12) The walls and roofs of the station buildings and the surroundings places at Shimshapura and Sivasamudram in the gorge have been painted with camouflage paint.

(13) The out-door transformers and switchgear installed at Shimshapura and the structure housing them have been painted with camouflage paint.

(14) All the transmission line structures within one mile of the Receiving and Generating Stations have been painted with camouflage paint.

(15) The roofs of the Receiving Stations at Bangalore and Mysore are being painted with camouflage paints.

(16) The walls and the roofs of the Switching Station at Kankanhalli and the out-door lightning arresters and the transmission dead ending structures are being painted with camouflage paint.

In order to give you some idea of the above works, I am enclosing herewith blueprints showing the works carried out at various Receiving Stations at Bangalore, Kolar Gold Fields and Kankanhalli. The drawings relating to the protective works at Sivasamudram and Shimshapura are getting ready and I will be able to mail them to you by the end of this week.

I shall be obliged, if you will kindly let me know if any additional work other than that has been carried out is considered necessary to enable me to take further action in the matter.

However, if you desire any further information on the various works that have been carried out, I shall be very pleased to furnish the same on hearing from you.

"C O P Y"

SJG.

General Superintendent, C.P

Copy of D.O.NO.E1.C.1/8/3(b) dated 7/8th April 42, from Major R.L.Evans, I.E., Superintending Engineer, Department of Supply, Office of the Electrical Commissioner with the Government of India, 17, Esplanade Mansions, Calcutta, to M.Hayath, Esq., General Superintendent, C.P.S.,Bangalore.

I have read with interest the details of the A.R.P. work which have been caried out at your Generating and Receiving Stations and as far as I can see they are fairly complete for what is called light type of protection. The attached memoranda Nos. 1 & 2 deal with this question and you might find it advisable to instal "Weldmesh" screens over some of your plants for protection against falling debris.

2. If you decide on this form of protection, please let me know your estimated requirements and I will endeavour to have an allotment made when the next quota of Weldmesh is manufactured.

"C O P Y"

M. Hayath 6/5

General Superintendent,
Cauvery Power Scheme,

SJG.

Copy of D.O.No.E1.C.1/8/3(b) dated 22/23rd April 42, from Major R.L.Evans, I.E., Superintending Engineer, Department of Supply, Office of the Electrical Commissioner with the Government of India, 17, Esplanade Mansions, Calcutta, to M.Hayath Esq.,General Superintendent, C.P.S., Bangalore.

With reference to my letter No.E1.C.1/8/3(b) dated 7-4-42, I have received drawings of A.R.P. structural measures of your undertaking. On scrutiny, I would suggest the following alterations for your consideration:-

1) Referring drawing No.A1 & A3, if possible a blast wall is suggested instead of asbestos partition wall, as the latter would not stand against blast & splinter.

2) From the drawing No.F2 it would seem that a division walls between the banks of transformers shown, could be built and it would be advisable to take this work in hand if possible.

3) If no arrangement exists regarding drainage of transformer oil to a soak pit outside the building, I would suggest you build 5" dwarf bunding wall round the transformer and run the drain pipe to a soak pit outside the building.

4) Referring to drawing No.A3 "Brick in clay 9" thick" over the windows would not stand against blast and splinter. Moreover, there is danger of having added missiles in the form of flying bricks due to blast caused by bomb explosion. It is therefore, suggested that the bricking up of these should be done with cement mortar binding instead of brick in clay.

5) It is usual to construct the traverse walls so as they do not touch the main wall of the building as the vibration due to bomb explosion might cause damage the main building wall.

6) Referring to your letter No.D.O.775 dated 14-4-42, I would suggest that provision should be made to cover with "weldmesh" shelter, the main exciters, servo motors, switch boards and frequency changes of the station at Sivasamudram and Shimshapura. Due to shortage of "Weldmesh" in the market this work may have to be held up for the time being, but if you could calculate your requirements I will make an allotment as soon as the material is available.

"C O P Y"

General Superintendent
Cauvery Power Scheme.

SJG.

Copy of D.O.No.848 dated 5th May 1942, from the General Superintendent, C.P.S., Bangalore, to Major R.L.Evans, I.E., Superintending Engineer, Office of the Electrical Commissioner, with the Govt.of India, 17 Esplanade Mansions, Calcutta.

I wish to acknowledge with thanks your letter No.D.O. El.C.1/8/3(b) dated the 22/23rd ultimo and in reply wish to state as follows:-

1) Drg.A1 & A3: The space available between the different Transformer Banks is so little that it does not admit of any partition walls being constructed. I have placed asbestos sheets in the middle to prevent spread of burning oil from one transformer bank to the other in case one of them gets damaged.

2) Drg.No.F2: Necessary division walls are being constructed.

3) In every station arrangements exist for draining of transformer oil to a soak pit outside the building and we have constructed all round the different transformer banks dwarf walls and the open drains run along the length to a soak pit outside the station.

4) As suggested by you, I am arranging to get necessary sanction of Government for putting up brick-in-cement walls 9" thick in the gallery floor in all the stations.

5) The transverse walls have been given the necessary support with the main wall of the building, as all the walls of our Power Stations are granite stone walls nearly 2 to 5 ft. thick and the main station walls have got buttresses for supporting the crane way inside. Therefore, it is felt that they are sufficiently strong to stand the strain that may be caused due to bomb explosions and the walls being meant only to avoid blasts or splinters reaching inside the station through the doors and windows. I may also add that this support referred to above is not a solid wall, but intermediate supports with a lot of opening for ventilation, which may be termed as honeycombed brick work. However, I shall be glad to abide by your advice in case you consider even this as dangerous by removing the same.

6) I am working out the details regarding my requirements of "weldmesh" and I shall certainly send you the necessary requisition immediately I obtain the necessary approval of the Government for the purchase of the same. I am not sure if it is in order to request you to kindly let me know the cost of the "weldmesh" referred to, as local markets quote a price of 12 as. per Sq.ft. which appears to me rather excessive.

In conclusion, I wish to thank you very sincerely for the kind assistance given to me by your suggestions to enable me to protect the Power Stations to the extent possible against

P.T.O.

against possible damage during air-raids.

"C O P Y"

General Superintendent,
Cauvery Power Scheme.

SJG.